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|--|--|---|---------------------|--|-------------------|--------------------------------|--|
| AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT | | | 1. CONTRACT ID CODE | | Page 1 of 9 Pages | | |
| 2. AMENDMENT/MODIFICATION NO. 004 | | 3. EFFECTIVE DATE January 6, 1999 | | 4. REQUISITION/PURCHASE REQ. NO. | | 5. PROJECT NO. (If applicable) | |
| 6. ISSUED BY Bureau of Reclamation Lower Colorado Region P.O. Box 61470 Boulder City NV 89006-1470 | | CODE LC-3113 http://www.lc.usbr.gov/~g3100/ | | 7. ADMINISTERED BY (If other than Item 6) | | CODE | |
| 8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State, and ZIP code) | | | | <input checked="" type="checkbox"/> 9A. AMENDMENT OF SOLICITATION NO. 99-SQ-30-12510 | | | |
| | | | | <input checked="" type="checkbox"/> 9B. DATED (SEE ITEM 11) November 24, 1998 | | | |
| | | | | 10A. MODIFICATION OF CONTRACT/ORDER NO. | | | |
| | | | | 10B. DATED (SEE ITEM 13) | | | |
| CODE | | FACILITY CODE | | | | | |

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☒ is extended, ☐ is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning 1 copy of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. **FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER.** If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (if required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

| | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT/ORDER NO. IN ITEM 10A. |
| | B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b). |
| | C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: |
| | D. OTHER (Specify type of modification and authority) |

E. **IMPORTANT:** Contractor ☐ is not ☐ is required to sign and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible)

Project Title: Armature Winding, Core and Reconditioned Exciter for Generator at Davis Powerplant, Parker-Davis Project, Arizona

Purpose of Amendment: The purpose of this amendment is to (1) extend the date for receipt of proposals; (2) make changes to the specifications; and (3) provide answers to questions submitted by potential offerors.

Receipt of Offers: The date for receipt of offers is hereby extended from January 12, 1999, to January 19, 1999, The time and place of receipt remain 3 p.m. local time at the Bureau of Reclamation, Lower Colorado Regional Office, Annex Building, Room AA-123, Nevada Hwy. and Park Street, Boulder City, Nevada.

Acknowledgment: See block 11 above regarding how to acknowledge this amendment. The acknowledgment must be received at the place designated for receipt of offers (see block 9 of the "Solicitation/Contract/Order for Commercial Items," Standard Form 1449).

(Continued on the following pages)

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

| | | | |
|---|------------------|--|------------------|
| 15A. NAME AND TITLE OF SIGNER (Type or print) | | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) | |
| 15B. CONTRACTOR/OFFEROR | 15C. DATE SIGNED | 16B. UNITED STATES OF AMERICA | 16C. DATE SIGNED |
| (Signature of person authorized to sign) | | BY _____ (Signature of Contracting Officer) | |

Description of the Changes:

1. The answers are hereby provided to questions submitted by potential offerors during and after the site visit.
2. Several changes have been made to the specifications as a result of the questions and answers. Refer to the listing below for the specific pages which were revised.

Instructions:

Remove

Replace with Revised

N/A

Questions and Answers
(2 pages)

Pages 1 thru 2 (SF 1449)

Pages 1 thru 2 (SF 1449)

Page 9

Page 9

Pages 56 thru 57

Pages 56 thru 57

Questions and Answers

1. On item 10C of bid page, should this be the price for only one (1) reading?
 - A. It is up to the Contractor to determine if the core is circular and centered to the turbine bearing. The amount of readings necessary to make this determination is the Contractor's responsibility.
2. On item 7B of bid page, should the price be shown separately for armature winding/commutator from the field frame - fields and interpoles?
 - A. No, do not itemize the cost of disposing of each part of the exciter. The bid item is for a lump sum.
3. Part 5, page 65 of 95, which covers new core clamping fingers. Are the new fingers to be non-magnetic?
 - A. It is up to the contractor to determine the material composition and design of the core clamping system to adequately maintain a tight core. However, we believe a magnetic material might cause additional heating and losses in the clamping system.
4. On question #20, page 5 of 45, the government states in its answer it will provide reference for center. What type of reference point will be supplied?
 - A. We believe this is in reference to question # 19 not question # 20. The Government will remove the turbine shaft and intermediate shaft and will provide the center of the turbine bearing for the Contractor's reference. The Contractor may assist Reclamation during this determination and/or verify the turbine bearing center.
5. The bid spec. states that government will remove minimum of two (2) air coolers. We would request all coolers be removed to provide needed access to back iron for cleaning after shell blasting. If a new core is to be installed this will also provide access for core iron RTD installation.
 - A. All coolers will be removed by Government forces as they will be replaced with new ones.
6. What is the air volumes (CFM) available at 95 P.S.I.?
 - A. Supply pipe is 1-inch diameter, supplied by up to 500 CFM compressor.
7. Section 2.02C states that contractor will be charged at a rate of \$40 per hour for government provided operator. Does this rate include overtime hours? Can the contractor provide his own operator and use the government's crane?
 - A. Overtime hours will be at a rate of \$60 per hour. The cranes will operated by government operators.

8. During disassemble, will the government be removing the cooling pipes which run into the I.D. of the generator bore and drops down through the steel deck plates?

A. No.

9. Please provide the following information:

Armature Core Diameter
Armature Core Length
Armature - Quantity of Slots
Armature Coil Weight
Commutator Outside Diameter
Commutator Brush Surface Length
Commutator Quantity Bars
Field Frame - Quantity Field Coils
Field Coil Weight
Field Coil Quantity of Turns

A. No data is available other than as stated on page 33 of the specifications.

10. Section 5.01b (1) states that each lamination is to be coated on both sides preferably after punching and deburring with an insulating varnish....An alternate method, with excellent results, is to punch insulated electrical steel and deburr (maximum of 0.0004 inches) by pressing in a 150 ton press. Would this method be acceptable?

A. No. The specifications requirements will remain as stated.

11. The Wedge material requirement of GPO-1, GPO-2 or GPO-3 will not meet the insulation Class F requirement of page 57 of 95; therefore, should not the wedge material be changed to NEMA G-10 or G-11?

A. Change has been made section 3.05.e. on page 57 of the specifications.

12. Due to the ring bus requirement of the current density being not greater than the existing ring buses, may the existing ring buses be reinsulated and reused if a mechanical inspection of the existing bus rings indicates/verifies they are in good as new condition? (Page 53 of 95)

A. New ring buses are required as per specifications.

| | | | | | | | | | | | | | |
|---|--|---|--|---|--|--|--|---|--|-----------------------|--|------------------|--|
| SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS | | | | | | 1. REQUISITION NUMBER 99316000047 | | PAGE 1 OF 95 PAGES | | | | | |
| OFFEROR TO COMPLETE BLOCKS 12, 17, 23, 24, & 30 | | | | | | | | | | | | | |
| 2. CONTRACT NO. | | 3. AWARD/EFFECTIVE DATE | | 4. ORDER NUMBER | | 5. SOLICITATION NUMBER 99-SQ-30-12510 | | 6. SOLICITATION ISSUE DATE 11/24/98 | | | | | |
| 7. FOR SOLICITATION INFORMATION CALL: | | a. NAME Beverly K. Nelson (e-mail: bnelson@lc.usbr.gov) | | | | b. TELEPHONE NUMBER (No collect calls) (702) 293-8524 | | 8. OFFER DUE DATE/LOCAL TIME 1/19/99 @ 3:00 PM | | | | | |
| 9. ISSUED BY | | CODE LC-3113 | | 10. THIS ACQUISITION IS <input checked="" type="checkbox"/> UNRESTRICTED <input type="checkbox"/> SET ASIDE % FOR <input type="checkbox"/> SMALL BUSINESS <input type="checkbox"/> SMALL DISADV. BUSINESS <input type="checkbox"/> 8(a) SIC: 3621 SIZE STANDARD: 1,000 employees | | 11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED <input type="checkbox"/> SEE SCHEDULE <input type="checkbox"/> 13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700) | | 12. DISCOUNT TERMS | | | | | |
| Mail to: Bureau of Reclamation Lower Colorado Regional Office P.O. Box 61470 Boulder City NV 89006-1470 | | Overnight Mail to: Bureau of Reclamation Lower Colorado Regional Office 400 Railroad Avenue Boulder City NV 89005 | | | | 13b. RATING | | 14. METHOD OF SOLICITATION <input checked="" type="checkbox"/> RFQ <input type="checkbox"/> IFB <input type="checkbox"/> RFP | | | | | |
| 15. DELIVER TO CODE | | | | 16. ADMINISTERED BY CODE LC-3113 Bureau of Reclamation Lower Colorado Regional Office P.O. Box 61470 Boulder City NV 89006-1470 | | | | | | | | | |
| 17a. CONTRACTOR/OFFEROR CODE | | FACILITY CODE | | 18a. PAYMENT WILL BE MADE BY CODE D-7734 U.S. Department of the Interior Bureau of Reclamation Reclamation Service Center P.O. Box 25508 Denver CO 80225-0508 | | | | | | | | | |
| TELEPHONE NO. | | | | | | | | | | | | | |
| <input type="checkbox"/> 17b. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER | | | | 18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a UNLESS BLOCK BELOW IS CHECKED <input checked="" type="checkbox"/> SEE ADDENDUM | | | | | | | | | |
| 19. ITEM NO. | | 20. SCHEDULE OF SUPPLIES/SERVICES | | 21. QUANTITY | | 22. UNIT | | 23. UNIT PRICE | | 24. AMOUNT | | | |
| | | SEE PARAGRAPH 4. CONTINUATION OF BLOCKS 19 THROUGH 24 (Attach Additional Sheets as Necessary) | | | | | | | | | | | |
| 25. ACCOUNTING AND APPROPRIATION DATA | | | | | | | | 26. TOTAL AWARD AMOUNT (For Govt. Use Only) | | | | | |
| <input type="checkbox"/> 27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1, 52.212-4. FAR 52.212-3 AND 52.212-5 ARE ATTACHED. ADDENDA <input checked="" type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED. <input type="checkbox"/> 27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4. FAR 52.212-5 IS ATTACHED. ADDENDA <input checked="" type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED. | | | | | | | | | | | | | |
| 28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN <u>1</u> COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED HEREIN. <input checked="" type="checkbox"/> | | | | 29. AWARD OF CONTRACT: REFERENCE OFFER DATED _____ YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS: <input type="checkbox"/> | | | | | | | | | |
| 30a. SIGNATURE OF OFFEROR/CONTRACTOR | | | | 31a. UNITED STATES OF AMERICA (SIGNATURE OF CONTRACTING OFFICER) | | | | | | | | | |
| 30b. NAME AND TITLE OF SIGNER (TYPE OR PRINT) | | | | 30c. DATE SIGNED | | | | 31b. NAME OF CONTRACTING OFFICER (TYPE OR PRINT) | | | | 31c. DATE SIGNED | |
| 32a. QUANTITY IN COLUMN 21 HAS BEEN <input type="checkbox"/> RECEIVED <input type="checkbox"/> INSPECTED <input type="checkbox"/> ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED | | | | 33. SHIP NUMBER <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL | | 34. VOUCHER NUMBER | | 35. AMOUNT VERIFIED CORRECT FOR | | | | | |
| 32b. SIGNATURE OF AUTHORIZED GOVT. REPRESENTATIVE | | | | 32c. DATE | | 36. PAYMENT <input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL | | 37. CHECK NUMBER | | | | | |
| 41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT | | | | 41b. RECEIVED BY (Print) | | 38. S/R ACCOUNT NUMBER | | 39. S/R VOUCHER NUMBER | | 40. PAID BY | | | |
| 41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER | | | | 41c. DATE | | 42a. RECEIVED AT (Location) | | 42c. DATE REC'D (YY/MM/DD) | | 42d. TOTAL CONTAINERS | | | |

Public reporting burden for this collection of information is estimated to average 45 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the FAR Secretariat (VRS), Office of Federal Acquisition Policy, GSA, Washington, DC 20405

OMB No.: 9000-0136
Expires: 09/30/98

(C) WARRANTED CHARACTERISTICS (Applies to all units)

(a) Armature Winding. The offeror warrants that the losses for the generator, after installation of the new armature winding, will not exceed the value stated below (also see paragraph 1.02, General Description and Operating Conditions of Powerplant):

| Description | Warranted Characteristic |
|--|--------------------------|
| The armature winding I^2R at 13,800 volts, 60 Hertz, 1.0 power factor, and 48,000 kilovolt-ampere output, at a winding temperature of 95°C, will not exceed (see the "Failure to Meet Performance Warranties" clause and "Evaluation–Commercial Items" provision). | _____kilowatts |

NOTE: Offers failing to indicate this loss value, as well as offers warranting a value in excess of 300 kilowatts, will not be considered for award.

(b) Reconditioned Exciter. The offeror warrants that the losses for the reconditioned exciter, after installation of this exciter, will not exceed the value stated below (also see paragraph 1.02, General Description and Operating Conditions of Powerplant):

| Description | Warranted Characteristic |
|--|--------------------------|
| \$ The reconditioned exciter I^2R at a generator output of 13,800 volts, 60 Hertz, 1.0 power factor, and 48,000 kilovolt-ampere output, at a winding temperature of 95°C , will not exceed (see the "Failure to Meet Performance Warranties" clause and "Evaluation–Commercial Items" provision). | _____kilowatts |

(c) Generator Stator Core. The offeror warrants that the losses for the new generator stator core, after installation of the new generator stator core, will not exceed the value stated below (also see paragraph 1.02, General Description and Operating Conditions of Powerplant):

| Description | Warranted Characteristic |
|--|--------------------------|
| The total new generator stator core at 13,800 volts, 60 Hertz, 1.0 power factor, and 48,000 kilovolt-ampere output, will not exceed (see the "Failure to Meet Performance Warranties" clause and "Evaluation–Commercial Items" provision). | _____kilowatts |

NOTE: Offers failing to indicate this loss value, as well as offers warranting a value in excess of 414 kilowatts, will not be considered for award.

The coils shall have at least one internal coil transposition in the coil shoulders or shall be transposed by an alternate method to minimize the stray load losses due to nonuniform current distribution. Alternate methods of transposition must have the approval of the Contracting Officer.

d. Corona suppression system.- The armature coils shall be furnished with a protective system consisting of a semiconductive treatment in the slot area and a voltage grading treatment above and below the generator stator core to minimize partial discharge. The slot portion of the coil shall be treated with a complete and continuous semiconducting compound to provide a Faraday shield and a grounding system for the prevention of electrical discharges and visible corona. The semiconductive shield system shall extend beyond the generator stator core and shall be overlapped by the voltage grading treatment. In applying the voltage grading treatment over the semiconductive treatment, precautions shall be taken to ensure that any deteriorating effects including softening and possible displacement of the semiconductive treatment at this junction does not occur.

The semiconductive slot treatment shall consist of an impregnated tape application, a semiconductive silicon rubber coating, or a semiconductive thermosetting paste in a semiconductive wrapper, and shall be completely and permanently bonded to the armature coil. Treatments consisting of semiconductive paint applied to the armature coil will not be accepted, except where it can be demonstrated that the paint penetrates the armor or outer binding tape, and is consistent with the bonding requirements stated above. Semiconductive paint treatment systems shall be specifically approved by the Contracting Officer before they can be used.

The semiconductive slot treatment system combined with proper coil installation and wedging must ensure that adequate coil to generator stator core contact is established and maintained and that the charge which may occur on the coil assembly surface is displaced through the contact surface established without the development of damaging slot discharges and corona activities. The semiconductive treatment in the slot portion of the coil shall not adhere to the generator stator core.

The voltage grading treatment system applied to the armature coil ends shall also impregnate the armor or outer binding tape. The resistance of the grading treatment shall be selected to meet the following performance criteria:

- (1) It shall prevent discharges from occurring at the junction between the grading treatment and the semiconductive slot treatment.
- (2) It shall prevent discharges from occurring at the high voltage end of the grading treatment system.
- (3) It shall prevent deterioration due to high current heating at the junction of the grading treatment and the semiconductive slot treatment.
- (4) If a multistage grading system is used, the resistance of the individual treatments shall be matched to prevent discharges or heat deterioration at the junction areas where the treatments overlap.

- (5) The corona prevention treatment system shall not display any detectable partial discharges during a lights-out test.

The corona prevention treatment system shall be able to withstand without injury the direct-current, high-voltage test of 48,600 volts and the alternating-current, high-potential test of 28,600 volts as described in paragraph 6.03 (Field Tests).

The entire corona prevention treatment system shall be resistant to physical damage which can occur during handling, installation, normal maintenance and cleaning. The semiconductive slot treatment and the voltage grading treatment shall be resistant to normal cleaning solvents such as trichloromethane, Stoddard solvent, or any other commercially available solvent used in the industry for cleaning electrical equipment. A list of acceptable cleaning agents shall be included in the installation procedure and the safety program submitted to the Contracting Officer for approval. The instruction manuals shall also contain this list.

Additional corona prevention requirements are specified in Paragraph 3.06 (Winding Replacement).

- § e. Wedges and slot fillers. - Provisions shall be made for tightly wedging the coils in the slots with wedges which will not shrink or buckle. Wedges shall be made from glass mat base laminate NEMA grade GPO-1, or GPO-2 or **GPO-10 or better** (NEMA LI 1-1989 (R1995)). Slot filler strips shall be fabricated from semiconducting material. Spring-type wedge filler materials shall be furnished and installed directly behind the wedges for providing a positive radial force on the bars. The force applied to the coils by the spring-type fillers shall be at least 150 percent of the maximum radial electromagnetic forces applied to the coils. Additionally, the amount of spring displacement shall be at least 150 percent of the total amount of expected radial decrease of materials in the slot due to shrinkage or relaxation during the expected life of the armature winding. The spring filler material shall be capable of continuous satisfactory operation for the entire life of the winding. The spring-type wedge filler material may be constructed of nonconducting material. Flat filler strips of semiconducting material shall be installed at the bottom of each slot and between the spring-type wedge filler material and the top coil in each slot.

Wedges with appropriately located gauging holes, with a minimum of five holes in series, shall be installed in each slot to provide a positive means of measuring the actual amount of spring compression. At least every fourth wedge, or at least two wedges per slot for every 24 inches of slot length, shall have these gauging holes. The initial spring deflection measurements for each slot shall be recorded and furnished to Reclamation. The Contractor shall furnish all dedicated gauges and any other equipment required to determine the total spring compression and shall furnish instruction for using the gauges during installation and during future maintenance inspections. Care shall be exercised that blocking of the air passages cannot occur. All materials to be used in the stator slots shall be of the same insulation class as the coil insulation. Slot side fillers shall be used, but they shall be installed on one side only.

Other retaining methods employing radial springs will be considered, but they must be approved by the Contracting Officer before they are used.